



Southwest Kidney Institute Vascular Access Program



Hemodialysis and Vascular Access

Hemodialysis is a way to clean a person's blood when his or her kidneys are not working and requires access to a person's bloodstream. That access is referred to as a vascular access and is critical to maintaining a healthy and uninterrupted dialysis schedule. The main types of hemodialysis vascular accesses are fistula, graft, and hemodialysis catheter.

A **fistula** is a connection made by a surgeon between an artery and vein in a person's arm or leg. It is considered the best access because it has low risk of infection, is natural to the body, and typically provides many years of reliable use.

A **graft** is an artificial tube that is placed by a surgeon under the skin of a person's arm or leg when a suitable natural vein is not available for a fistula. Grafts have low risk of infection, but usually wear out faster than a fistula.

Hemodialysis catheters are typically placed into a large vein in the chest and can be used the same day. They have the highest risk of infection and wear out faster than a fistula or graft. The goal is to use a hemodialysis catheter for a short period of time while preparing for a fistula or graft.



Vascular Access Maintenance PROCEDURES

Although both fistulas and grafts can provide reliable access for many years, occasionally problems occur. Some fistulas do not mature completely and the vein does not grow as large as expected. A blockage or stenosis can also occur in the fistula or graft that limits the blood flow and makes hemodialysis difficult to perform and less effective. The access can also clot and hemodialysis cannot be performed. We monitor your access and perform routine and non-routine maintenance as needed.

A **fistulogram** is needed when there is a problem with the function of a fistula or graft. A small needle is placed into the access and x-ray dye is injected. X-ray pictures are taken to see if there is a blockage in the access. If a blockage is identified, the doctor stretches the blockage with a balloon, called **angioplasty**.



A **declot** is necessary when a person's vascular access has completely stopped working. The doctor will place two needles into the access to remove the clot and start the access flowing again. Since an access usually clots because a blockage has formed, the doctor may also perform a balloon angioplasty during the same visit.

Hemodialysis catheter insertion is performed if a patient does not yet have a permanent vascular access or if the doctor cannot fix a vascular access that has stopped working. The doctor usually places the catheter into a vein in the chest or leg. Ultrasound is used to ensure that the vein is safely punctured and an x-ray camera is used to verify that the catheter is positioned properly.

Hemodialysis catheter exchange is performed when a person's catheter fails to function properly. The doctor will use x-ray dye and an x-ray camera to take pictures of the catheter and vein to find out why the catheter is not working. A balloon angioplasty may be needed to break up scar tissue.

Hemodialysis catheter removal is performed when a person's permanent vascular access is working well or if the patient no longer requires hemodialysis.

What to Expect from Your Procedure and How to Prepare

Procedure duration can be anywhere from one to four hours. Most patients require an injection of numbing medicine (local anesthesia) and intravenous sedatives. We recommend that patients who have had sedation remain with someone for several hours after the procedure and do not drive for 24 hours following the procedure.

Fistulogram, Declot, or Hemodialysis Catheter Exchange – Do not eat or drink six hours prior to the procedure. Do not take insulin or diabetic medications the morning of the procedure. Other morning medications can be taken with a sip of water. Arrange transportation to and from the procedure. Patients cannot drive.

Hemodialysis Catheter Insertion – Do not eat or drink six hours prior to the procedure. Do not take insulin or diabetic medications the morning of the procedure. Stop taking any blood thinners such as aspirin or Coumadin three days prior to the procedure. Stop taking Plavix five days prior to the procedure. Other morning medications can be taken with a sip of water. Arrange transportation to and from the procedure. Patients cannot drive.

Hemodialysis Catheter Removal – Stop taking any blood thinners such as aspirin or Coumadin three days prior to the procedure. Stop taking Plavix five days prior to the procedure.



Southwest Kidney Institute is committed to providing the highest quality of care to our patients. This care includes monitoring and maintaining your dialysis access. Our interventional nephrologists are dedicated to maintaining your dialysis access to ensure you receive the best dialysis possible.

PHYSICIANS

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Our vascular access procedures are performed in our Vascular Access Center and at Phoenix St. Luke's Medical Center.

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